

BEFORE THE
PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA

In Re:

Annual Review of Base Rates
For Fuel Costs for
Duke Energy Carolinas, LLC

COVER SHEET

DOCKET
NUMBER: 2008-3-E

(Please type or print)

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DOCKETING INFORMATION (Check all that apply)

☐ Emergency Relief demanded in petition ☐ Request for item to be placed on Commission's Agenda expeditiously

☒ Other: Testimony of Jane L. McManeus

INDUSTRY (Check one)	NATURE OF ACTION (Check all that apply)			
<input checked="" type="checkbox"/> Electric	<input type="checkbox"/> Affidavit	<input type="checkbox"/> Letter	<input type="checkbox"/> Request	
<input type="checkbox"/> Electric/Gas	<input type="checkbox"/> Agreement	<input type="checkbox"/> Memorandum	<input type="checkbox"/> Request for Certificatio	
<input type="checkbox"/> Electric/Telecommunications	<input type="checkbox"/> Answer	<input type="checkbox"/> Motion	<input type="checkbox"/> Request for Investigation	
<input type="checkbox"/> Electric/Water	<input type="checkbox"/> Appellate Review	<input type="checkbox"/> Objection	<input type="checkbox"/> Resale Agreement	
<input type="checkbox"/> Electric/Water/Telecom.	<input type="checkbox"/> Application	<input type="checkbox"/> Petition	<input type="checkbox"/> Resale Amendment	
<input type="checkbox"/> Electric/Water/Sewer	<input type="checkbox"/> Brief	<input type="checkbox"/> Petition for Reconsideration	<input type="checkbox"/> Reservation Letter	
<input type="checkbox"/> Gas	<input type="checkbox"/> Certificate	<input type="checkbox"/> Petition for Rulemaking	<input type="checkbox"/> Response	
<input type="checkbox"/> Railroad	<input type="checkbox"/> Comments	<input type="checkbox"/> Petition for Rule to Show Cause	<input type="checkbox"/> Response to Discovery	
<input type="checkbox"/> Sewer	<input type="checkbox"/> Complaint	<input type="checkbox"/> Petition to Intervene	<input type="checkbox"/> Return to Petition	
<input type="checkbox"/> Telecommunications	<input type="checkbox"/> Consent Order	<input type="checkbox"/> Petition to Intervene Out of Time	<input type="checkbox"/> Stipulation	
<input type="checkbox"/> Transportation	<input type="checkbox"/> Discovery	<input checked="" type="checkbox"/> Prefiled Testimony	<input type="checkbox"/> Subpoena	
<input type="checkbox"/> Water	<input type="checkbox"/> Exhibit	<input type="checkbox"/> Promotion	<input type="checkbox"/> Tariff	
<input type="checkbox"/> Water/Sewer	<input type="checkbox"/> Expedited Consideration	<input type="checkbox"/> Proposed Order	<input type="checkbox"/> Other:	
<input type="checkbox"/> Administrative Matter	<input type="checkbox"/> Interconnection Agreement	<input type="checkbox"/> Protest		
<input type="checkbox"/> Other:	<input type="checkbox"/> Interconnection Amendment	<input type="checkbox"/> Publisher's Affidavit		
	<input type="checkbox"/> Late-Filed Exhibit	<input type="checkbox"/> Report		

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**TESTIMONY OF
JANE L. McMANEUS**

1 **Q. PLEASE STATE YOUR NAME, ADDRESS AND POSITION.**

2 A. My name is Jane L. McManeus. My business address is 526 South Church Street,
3 Charlotte, North Carolina. I am Director, Rates for Duke Energy Carolinas, LLC
4 ("Duke Energy Carolinas" or the "Company").

5 **Q. WHAT ARE YOUR PRESENT RESPONSIBILITIES AT DUKE ENERGY**
6 **CAROLINAS?**

7 A. I am responsible for managing Duke Energy Carolina's fuel recovery processes,
8 providing regulatory support for retail and wholesale rates, and providing guidance
9 on compliance with regulatory conditions and codes of conduct.

10 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND**
11 **PROFESSIONAL EXPERIENCE.**

12 A. I graduated from Wake Forest University with a Bachelor of Science in
13 Accountancy and received a Master of Business Administration degree from the
14 McColl Graduate School of Business at Queens University of Charlotte. I am a
15 certified public accountant licensed in the state of North Carolina and am a member
16 of the Southeastern Electric Exchange Rates and Regulation Section and the EEI
17 Rate and Regulatory Analysts group. I began my career with Duke Energy Carolinas
18 (formerly Duke Power Company) in 1979 as a staff accountant and have held a
19 variety of positions in the finance organizations. From 1994 until 1999, I served in
20 financial planning and analysis positions within the electric transmission area of
21 Duke Power. I was named Director, Asset Accounting for Duke Power in 1999 and

1 appointed to Assistant Controller in 2001. As Assistant Controller I was responsible
2 for coordinating Duke Power's operational and strategic plans, including
3 development of the annual budget and performing special studies. I joined the Rate
4 Department in 2003 as Director, Rate Design and Analysis. Beginning in April
5 2006, I became Director, Regulatory Accounting and Filings, leading the regulatory
6 accounting, cost of service, regulatory filings (including fuel) and revenue analysis
7 functions for Duke Energy Carolinas. I began my current position in the Rate
8 Department in October 2006.

9 **Q. ARE YOU FAMILIAR WITH THE ACCOUNTING PROCEDURES AND**
10 **BOOKS OF ACCOUNT OF DUKE ENERGY CAROLINAS?**

11 A. Yes. The books of account of Duke Energy Carolinas follow the uniform
12 classification of accounts prescribed by the Federal Energy Regulatory Commission
13 ("FERC").

14 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
15 **PROCEEDING?**

16 A. The purpose of my testimony is to provide the actual fuel and environmental cost
17 data for the period July 2007 through May 2008, the test period under review in this
18 proceeding; the projected fuel and environmental cost information for the period
19 June 2008 through September 2009; and the Company's recommended fuel factors
20 by customer class for billing the period October 2008 through September 2009.

1 **Q. YOUR TESTIMONY INCLUDES NINE EXHIBITS. WERE THESE**
2 **EXHIBITS PREPARED BY YOU OR AT YOUR DIRECTION AND UNDER**
3 **YOUR SUPERVISION?**

4 A. Yes. Each of these exhibits was prepared at my direction and under my supervision.

5 **Q. PLEASE PROVIDE A DESCRIPTION OF THE EXHIBITS.**

6 A. The exhibits and descriptions are as follows:

- 7 Exhibit 1 - Total Company Fuel Costs Detail for the Test Period
- 8 Exhibit 2 - Coal Cost per MBTU Burned
- 9 Exhibit 3 - Nuclear Cost per MBTU Burned
- 10 Exhibit 4 - Source of Generation by Period
- 11 Exhibit 5 - Test Period Fuel Costs and Revenues
- 12 Exhibit 6 - Projected Period Fuel Costs and Revenues
- 13 Exhibit 7 - Environmental Cost (Over)/Under Recovery by Customer
- 14 Class
- 15 Exhibit 8 - Projected Period Environmental Cost by Customer Class
- 16 Exhibit 9 - Projected Period Fuel Factor by Customer Class

17 **Q. HOW DOES DUKE ENERGY CAROLINAS MEET ITS CUSTOMERS'**
18 **NEEDS FOR ELECTRICITY?**

19 A. Duke Energy Carolinas meets its customers' needs for electricity through a
20 combination of Company-owned generation, purchases of power from others, and
21 customer demand-side options. Demand-side options include residential and non-
22 residential programs that provide credits to customers for allowing the Company to

1 curtail their electricity usage on occasion. Each day, Duke Energy Carolinas selects
2 the combination of Company-owned generating units and available power purchases
3 that will reliably meet customer needs in a least cost manner. Units with the lowest
4 overall operating costs (fuel, emission allowances and variable operations and
5 maintenance costs, etc.) are dispatched first, with higher cost units added as load
6 increases. Intraday adjustments are made to reflect changing conditions and
7 purchase opportunities. Witness Jones discusses the nuclear fleet operations and
8 witness Roebel discusses fossil and hydroelectric operations.

9 Additionally, the Company monitors the energy market, evaluating long-
10 term, seasonal, monthly, weekly, daily and hourly purchase opportunities. In making
11 these daily decisions on which resources should be used to meet customer needs, the
12 Company may purchase energy from other suppliers, whether under long-term
13 capacity agreements that the Company has entered into or short-term spot market
14 purchases to ensure it selects the most cost-effective, reliable solution.

15 **Q. PLEASE DESCRIBE THE RELATIVE COSTS OF THE VARIOUS FUELS**
16 **USED BY DUKE ENERGY CAROLINAS FOR ITS GENERATING UNITS.**

17 A. Nuclear fuel is the least costly fuel for the Company with a cost of approximately
18 .43 ¢/kWh. Coal costs are approximately 2.4 to 3.6 ¢/kWh depending on the
19 generating plant. Although the cost of natural gas and fuel oil on a cents per kWh
20 basis are significantly higher, the fuel expense for these fuels is small compared to
21 total fuel expense due to the limited need to call on our combustion turbines. The
22 fuel cost of conventional hydroelectric generation is essentially zero. The cost of

1 pumped storage hydroelectric generation is the fuel cost of the generating unit used
2 to pump the water to the upper reservoir. Hydroelectric operation is limited by the
3 amount of rainfall and the amount of water that can be drawn through the units in
4 compliance with the Company's operational licenses.

5 **Q. HOW MUCH OF DUKE ENERGY CAROLINAS' ENERGY CONSUMED**
6 **IN THE TEST PERIOD WAS GENERATED BY EACH TYPE OF**
7 **GENERATING UNIT?**

8 A. During the test period, the Company generated 81,247,689 megawatt hours
9 ("MWHs") of electricity¹. The fossil units provided 54% of Duke Energy
10 Carolinas' total generation, the nuclear units provided 46% and the hydroelectric
11 system provided 0% (net of megawatt-hours used for pumped storage).

12 **Q. PLEASE DESCRIBE HOW DUKE ENERGY CAROLINAS INCLUDED**
13 **FUEL COSTS RELATED TO PURCHASES IN ITS FUEL EXPENSES FOR**
14 **THE TEST PERIOD.**

15 A. The definition of fuel costs related to purchased power set forth in Section 58-27-
16 865(A) of the 1976 Code of Laws of South Carolina includes the "costs of firm
17 generation capacity purchases, which are defined as purchases made to cure a
18 capacity deficiency or to maintain adequate reserve levels" and "the total delivered
19 cost of economy purchases of electric power." The statute further defines economy
20 purchases as purchases "made to displace higher cost generation, at a price which is

¹ Reflects the Company's partial ownership share of Catawba Nuclear Station.

1 less than the purchasing utility's avoided variable costs for the generation of an
2 equivalent amount of electric power."

3 In accordance with the statute, the Company used the avoided cost method
4 to determine the fuel component of purchases of power for Duke Energy Carolinas'
5 retail customers. Under this methodology, the Company determines the costs it
6 would have incurred in the absence of the purchase. This cost is determined by use
7 of a model that identifies the incremental cost of the unit that would have been
8 dispatched in the absence of the purchase and compares that cost to the cost of the
9 purchase. The incremental cost includes the fuel and certain variable operation and
10 maintenance costs. The Company includes in fuel costs the lower of the cost of the
11 energy purchase or the cost Duke Energy Carolinas would have incurred. Duke
12 Energy Carolinas' customers thereby are ensured of receiving the benefit of
13 purchased power.

14 **Q. MS. MCMANEUS, PLEASE DESCRIBE HOW NUCLEAR COSTS ARE**
15 **INCLUDED IN THE COMPANY'S FUEL EXPENSES.**

16 A. The cost of each fuel assembly is determined when the fuel is loaded in the reactor.
17 The costs include yellowcake (uranium), conversion, enrichment and fabrication. In
18 his testimony, Witness Geer describes the components that make up nuclear fuel in
19 greater detail. An estimate of the energy content of each fuel assembly is also made.
20 Nuclear fuel expenses for each month are based on the energy output in units of
21 million BTUs ("MBTUs") of each fuel assembly in the core and Department of
22 Energy 'High Level Waste' and 'Decontamination and Decommissioning Fund'

1 fees. A cost per MBTU is determined by dividing the cost of the assembly by its
2 expected energy output. Each month a calculation of the MBTU output of an
3 assembly is priced at its cost per MBTU. During the life of a fuel assembly, the
4 expected energy output may change as a result of actual plant operations. When this
5 occurs, changes are made in the cost per MBTU for the remaining energy output of
6 the assembly.

7 **Q. MS. MCMANEUS, CAN YOU EXPLAIN HOW COAL COSTS ARE**
8 **INCLUDED IN THE COMPANY'S FUEL EXPENSES?**

9 A. Duke Energy Carolinas calculates coal costs charged to fuel expense on an
10 individual plant basis. The expense charge is the product of the tons of coal
11 conveyed to the bunkers for a generating unit during the month multiplied by the
12 average cost of the coal. The number of tons is determined by using scales located
13 on the conveyor belt running to the unit's coal bunkers. The average cost reflects the
14 total cost of coal on hand as of the beginning of the month, computed using the
15 moving average inventory method, plus the cost of coal delivered to the plant during
16 the month. Duke Energy Carolinas determines the cost of coal based upon the
17 invoice for the coal and the freight bill, and does not include any non-fuel cost or
18 coal handling cost at the generating station.

19 Duke Energy Carolinas conducts annual physical inventories of coal piles
20 through aerial surveys. The Company made an adjustment to book inventory and
21 fuel expense in December 2007 based on the results of the annual inventory.

22 **Q. MS. MCMANEUS, WHAT DOES EXHIBIT 1 SHOW?**

1 A. McManeus Exhibit 1 sets forth the total system actual fuel costs (as burned) that the
2 Company incurred from July 2007 through May 2008. This exhibit also shows fuel
3 costs by type of generation and total megawatt hours (MWH) generated during this
4 period. The monthly fluctuations in total fuel cost during this period are primarily
5 due to refueling and other outages at the nuclear stations, weather sensitive sales and
6 the availability of hydroelectric generation.

7 **Q. WHAT IS THE MAGNITUDE OF THE COMPANY'S FUEL COST**
8 **COMPARED TO THE TOTAL COST OF SERVICE?**

9 A. Fuel costs continue to be the largest cost item Duke Energy Carolinas incurs in
10 providing electric service. For the eleven months ended May 2008, fuel and the fuel
11 component of purchased power represented approximately 28% of the Company's
12 total revenue. Of fuel costs, coal costs are the largest component and during the
13 period July 2007 through May 2008 comprised approximately 82% of the costs of
14 the Company's fuel burned.

15 **Q. MS. MCMANEUS, WHAT CHANGES HAVE OCCURRED IN THE UNIT**
16 **COST OF FUEL DURING RECENT REPORTING PERIODS?**

17 A. McManeus Exhibits 2 and 3 graphically portray the "as burned" cost of coal and
18 nuclear fuel respectively in cents per MBTU for the twelve month periods ending
19 January 2006 through May 2008. As McManeus Exhibit 2 shows, coal costs
20 increased during the period as testified to by Witness Batson. McManeus Exhibit 3
21 shows that nuclear fuel costs have been relatively stable over the same period.
22 Witness Geer discusses changes in the cost of the various components of nuclear

1 fuel in his testimony. The costs incurred by Duke Energy Carolinas for the other
2 fossil fuels used by the Company, natural gas and fuel oil, are a very small
3 percentage of the total fuel costs. The costs incurred during the test period for these
4 fuels were approximately \$75 million, or 5% of the Company's total fuel expense
5 for the period.

6 Duke Energy Carolinas expects its composite cost of fuel to increase. As
7 testified to by Witness Batson, the market price of coal has increased dramatically in
8 the last year. The Company's cost of coal, which is more than seven times the cost
9 of nuclear fuel, has increased over the past several years and continues to increase as
10 older below-market contracts expire. The Company expects that future kWh growth
11 will be met primarily from the Company's coal generating units. In addition, as
12 discussed in greater detail by Witness Geer in his testimony, the market price of two
13 of the components of nuclear fuel has begun to increase.

14 **Q. WHAT DOES MCMANEUS EXHIBIT 4 SHOW?**

15 A. McManeus Exhibit 4 graphically shows generation by type for the current and
16 projected periods as well as three prior periods. As the Exhibit demonstrates,
17 nuclear and fossil fuel account for nearly 100% of the Company's total generation.

18 **Q. MS. MCMANEUS, DO YOU BELIEVE THE COMPANY'S ACTUAL FUEL**
19 **COSTS INCURRED DURING THE PERIOD JULY 2007 THROUGH JUNE**
20 **2008 WERE REASONABLE?**

21 A. Yes. I believe the costs are reasonable and that Duke Energy Carolinas has
22 demonstrated that it meets the criteria set forth in Section 58-27-865(F) of the Code

1 of Laws of South Carolina. These costs also reflect the Company's continuing
2 efforts to maintain reliable service and an economical generation mix, thereby
3 minimizing the total cost of providing service to our South Carolina retail
4 customers.

5 **Q. HOW DID THE COMPANY CALCULATE ITS FUEL COST RECOVERY**
6 **DURING THE JULY, 2007 THROUGH SEPTEMBER, 2008 TIME**
7 **PERIOD?**

8 A. McManeus Exhibit 5 shows the actual fuel costs incurred for the period July 2007
9 through May 2008 and the estimated fuel costs for June 2008 through September
10 2008. This exhibit compares the fuel costs incurred with the revenues collected
11 applying the applicable fuel cost component of 1.7457 ¢/kWh for the period
12 October 2007 through September 2008.

13 **Q. WHAT IS THE BASIS FOR ESTIMATING FUEL COSTS AS SHOWN ON**
14 **MCMANEUS EXHIBITS 5 AND 6?**

15 A. Duke Energy Carolinas developed the projections shown on McManeus Exhibits 5
16 and 6 based on the latest information available to the Company. The projected kWh
17 sales are from the Company's Spring 2008 sales forecast. Projected nuclear
18 generation reflects planned outages, which include refueling outages at 5 units
19 including one that extends beyond the forecast period. The projection of fuel costs
20 are based on a 97% capacity factor for the nuclear units while they are running. The
21 Company's most recent nuclear fuel cost estimate was used to determine projected
22 nuclear fuel expense. For the projected period October through December 2008,

1 conventional hydroelectric generation was based on prior year actual generation for
2 the same months to reflect the expected continuation of abnormal drought
3 conditions. For the projected period January through September 2009, conventional
4 hydroelectric generation was based on the Company's historical median hydro
5 generation for the period 1977 through 2007. Pumped storage hydroelectric
6 generation was based on the test period pumped storage operation at Jocassee and
7 Bad Creek. The Company estimates fuel costs of energy purchases based on
8 historical purchase quantities and price. Oil and gas fuel costs are based on the test
9 period and generation is based on a three year average. The Company assumes that
10 the remainder of the customers' energy needs are served from coal-fired units. The
11 projected price for coal contracts is based on the price of coal contracts that will be
12 in place during the projection period along with the current market price for coal
13 needs beyond the currently contracted amounts.

14 **Q. HOW DO INTERSYSTEM SALES OF POWER AFFECT THE**
15 **CALCULATION OF FUEL COSTS INCURRED AND THE PROJECTED**
16 **FUEL FACTOR FOR SOUTH CAROLINA RETAIL CUSTOMERS?**

17 A. The test period fuel costs incurred are calculated by subtracting the fuel costs
18 associated with non-firm intersystem sales from the total system burned fuel cost.
19 To determine the fuel costs associated with these intersystem sales, Duke Energy
20 Carolinas uses a post dispatch model to stack the sources of generation used in each
21 hour from least to highest total cost, and in order to hold retail customers harmless,
22 typically assigns the highest cost generating units on an incremental basis to non-

1 firm intersystem sales of power. The projected fuel factor is set based on an
2 assumed amount and cost of intersystem sales. The amount of non-firm intersystem
3 sales for the projected fuel factor is based on a three year average. However, the
4 costs of projected sales are adjusted from the test year costs by the same percentage
5 change as between the test year and projected period cost per kWh of coal since
6 higher priced fossil generation is typically assigned to intersystem sales.

7 **Q. WHAT DOES THE COMPANY ANTICIPATE ITS FUEL RECOVERY**
8 **POSITION WILL BE AS OF SEPTEMBER 30, 2008?**

9 A. Duke Energy Carolinas estimates that by the end of the current billing period
10 (September 30, 2008), the Company will be under-recovered in South Carolina by
11 \$63.4 million with respect to fuel costs and over-recovered by \$3.5 million with
12 respect to environmental cost, for a net estimated under-recovery of \$59.9 million.

13 **Q. MS. MCMANEUS, WHAT IS THE FUEL COST COMPONENT OF THE**
14 **FUEL FACTORS THE COMPANY PROPOSES FOR THE BILLING**
15 **PERIOD OCTOBER 2008 THROUGH SEPTEMBER 2009?**

16 A. McManeus Exhibit 6 sets forth projected fuel costs for the period October 2008
17 through September 2009. As shown on line 7, the fuel cost component estimated for
18 recovery during this period is 2.2164 ¢/kWh. After adjusting for the cumulative
19 over-recovery, the adjusted fuel cost component is 2.5047 ¢/kWh. Therefore, each
20 of the three fuel factors proposed by the Company for Commission approval include
21 fuel cost component of 2.5047 ¢/kWh.

1 **Q. HOW DOES DUKE ENERGY CAROLINAS REFLECT VARIABLE**
2 **ENVIRONMENTAL COSTS IN ITS FUEL FACTORS?**

3 A. Pursuant to Section 58-27-865(A)(1), which was amended by the General Assembly
4 in 2007 to add certain variable environmental costs, the Company calculates an
5 environmental component for each of the Residential, General Service/Lighting and
6 Industrial customer classes based upon the (1) over or under recovery of actual costs
7 incurred for emission allowances and reagent costs permitted under that statute
8 ("environmental costs") for the period July 2007 through May 2008, (2) estimated
9 over or under recovery of environmental costs for the period June 2008 through
10 September 2008, and (3) projected environmental costs for the period October 2008
11 through September 2009. The over/under recovery of environmental costs incurred
12 and projected environmental costs are then allocated among the three customer
13 classes based upon firm peak load for the appropriate period. The resulting
14 allocated costs are converted to the environmental component for each class
15 expressed in cents per kWh. Each environmental component is then added to the
16 fuel component proposed above resulting in a total fuel factor for each class.

17 **Q. PLEASE EXPLAIN HOW THE COMPANY DETERMINED THE "FIRM**
18 **PEAK DEMAND" FOR EACH CUSTOMER CLASS AND DEVELOPED**
19 **THE ALLOCATION FACTORS FOR ENVIRONMENTAL COSTS.**

20 A. We began with the demands of South Carolina retail customers by customer class at
21 the time of Duke Energy Carolinas' 2007 summer peak. We then subtracted the
22 amount of class demand for each customer class that is subject to interruption under

1 the Company's approved demand-response programs, but not interrupted at the time
2 of peak, in order to determine the firm demand. The firm demand for each class
3 was then converted to a percentage of the total firm demand. The firm demand
4 allocators are set forth on McManeus Exhibits 7 and 8. These percentages were
5 used to allocate the environmental costs between the Residential, General
6 Service/Lighting and Industrial customer classes.

7 **Q. HOW DID THE COMPANY CALCULATE ITS ENVIRONMENTAL COST**
8 **RECOVERY DURING THE JULY, 2007 THROUGH SEPTEMBER, 2008**
9 **TIME PERIOD?**

10 A. McManeus Exhibit 7 shows the actual environmental costs incurred for the period
11 July 2007 through May 2008 and the estimated environmental costs for June 2008
12 through September 2008. The exhibit compares the environmental costs incurred
13 with the revenue collected, applying the environmental cost components of 0.0368
14 ¢/kWh, 0.0291 ¢/kWh, and 0.0181 ¢/kWh for the Residential, General
15 Service/Lighting and Industrial classes respectively for the period October 2007
16 through September 2008. Actual costs are allocated among customer classes using
17 the 2006 firm peak demand on which the billed rates were established.

18 **Q. WHAT IS THE BASIS FOR ESTIMATING ENVIRONMENTAL COSTS AS**
19 **SHOWN ON MCMANEUS EXHIBITS 7 AND 8?**

20 A. As discussed by witnesses Roebel and Batson, the projected environmental costs are
21 based upon the most current forecasts produced by appropriate departments within
22 the Company. The Company estimates emission allowance expense and emission

1 allowance expense recovered in non-firm intersystem sales based on actual data.

2 Any gains on sales of emission allowances are based upon current forecasts.

3 **Q. MS. MCMANEUS, WHAT ARE THE ENVIRONMENTAL COST**
4 **COMPONENTS THE COMPANY PROPOSES FOR THE BILLING**
5 **PERIOD OCTOBER 2008 THROUGH SEPTEMBER 2009?**

6 A. McManeus Exhibit 8 sets forth projected environmental costs for the period October
7 2008 through September 2009. As shown on McManeus Exhibit 8, the proposed
8 environmental cost components for recovery during this period are 0.0439 ¢/kWh
9 for Residential customers, 0.0352 ¢/kWh for General Service/Lighting customers
10 and 0.0212 ¢/kWh for Industrial customers.

11 **Q. WHAT IS THE COMBINED COST OF FUEL THE COMPANY PROJECTS**
12 **FOR RECOVERY DURING THE PERIOD OCTOBER 2008 THROUGH**
13 **SEPTEMBER 2009?**

14 A. As shown in McManeus Exhibit 9, after adjusting for the environmental under-
15 recovery and adding in the fuel cost from line 12 of McManeus Exhibit 6, the
16 combined fuel factors estimated for recovery during this period are 2.5269 ¢/kWh
17 for Residential customers, 2.5231 ¢/kWh for General Service/Lighting customers
18 and 2.5145 ¢/kWh for Industrial customers. The Company seeks Commission
19 approval for these proposed combined fuel factors. Based on our estimate, the
20 proposed combined fuel factors would result in the Company being neither under-
21 or over-recovered in its fuel costs, including environmental costs, at the end of the
22 billing period in September 2009.

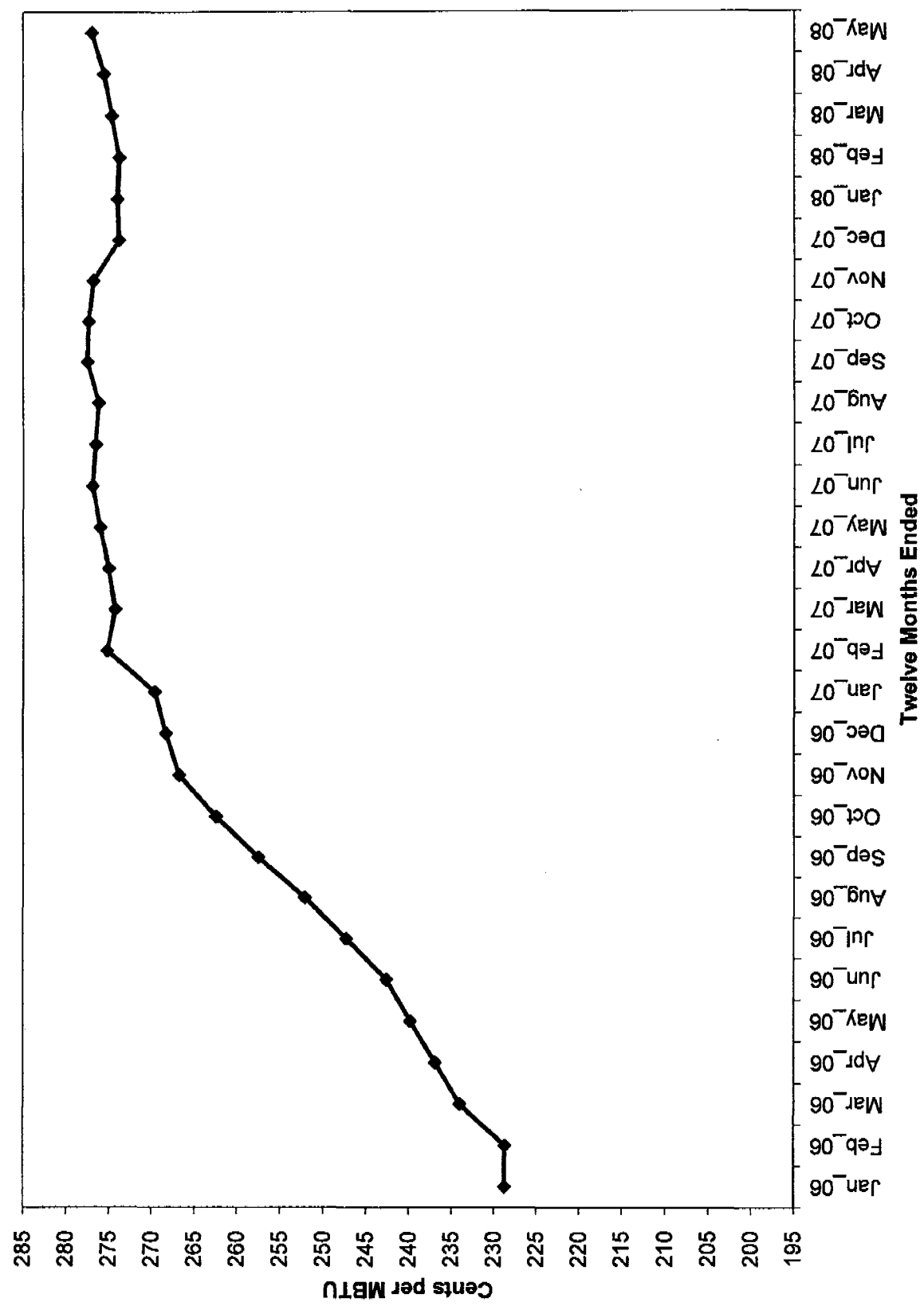
1 **Q. MS. MCMANEUS, DOES THIS CONCLUDE YOUR TESTIMONY?**

2 **A. Yes, it does.**

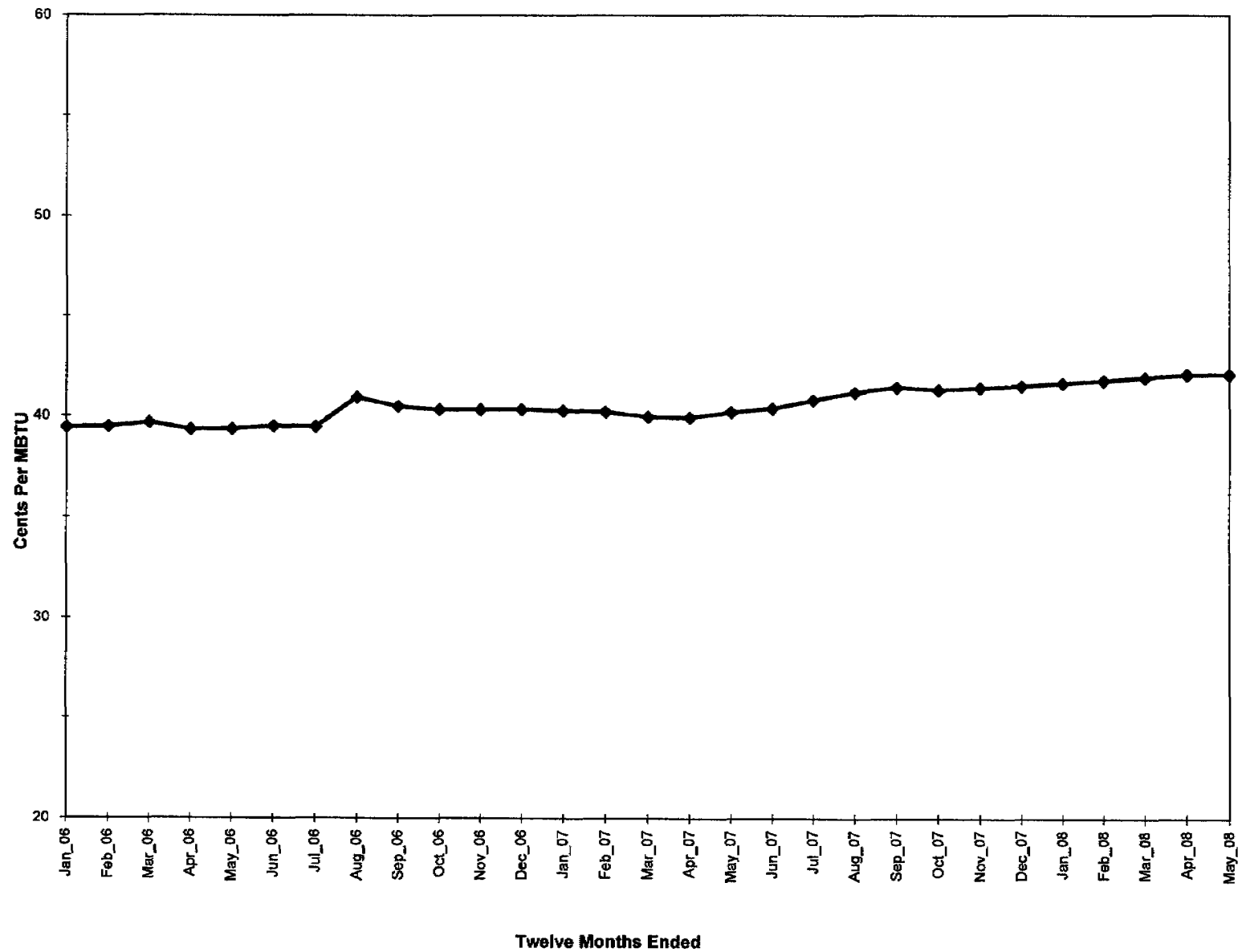
DUKE ENERGY CAROLINAS
SOUTH CAROLINA FUEL CLAUSE
2008 ANNUAL FUEL HEARING
TOTAL COMPANY FUEL COST
\$000

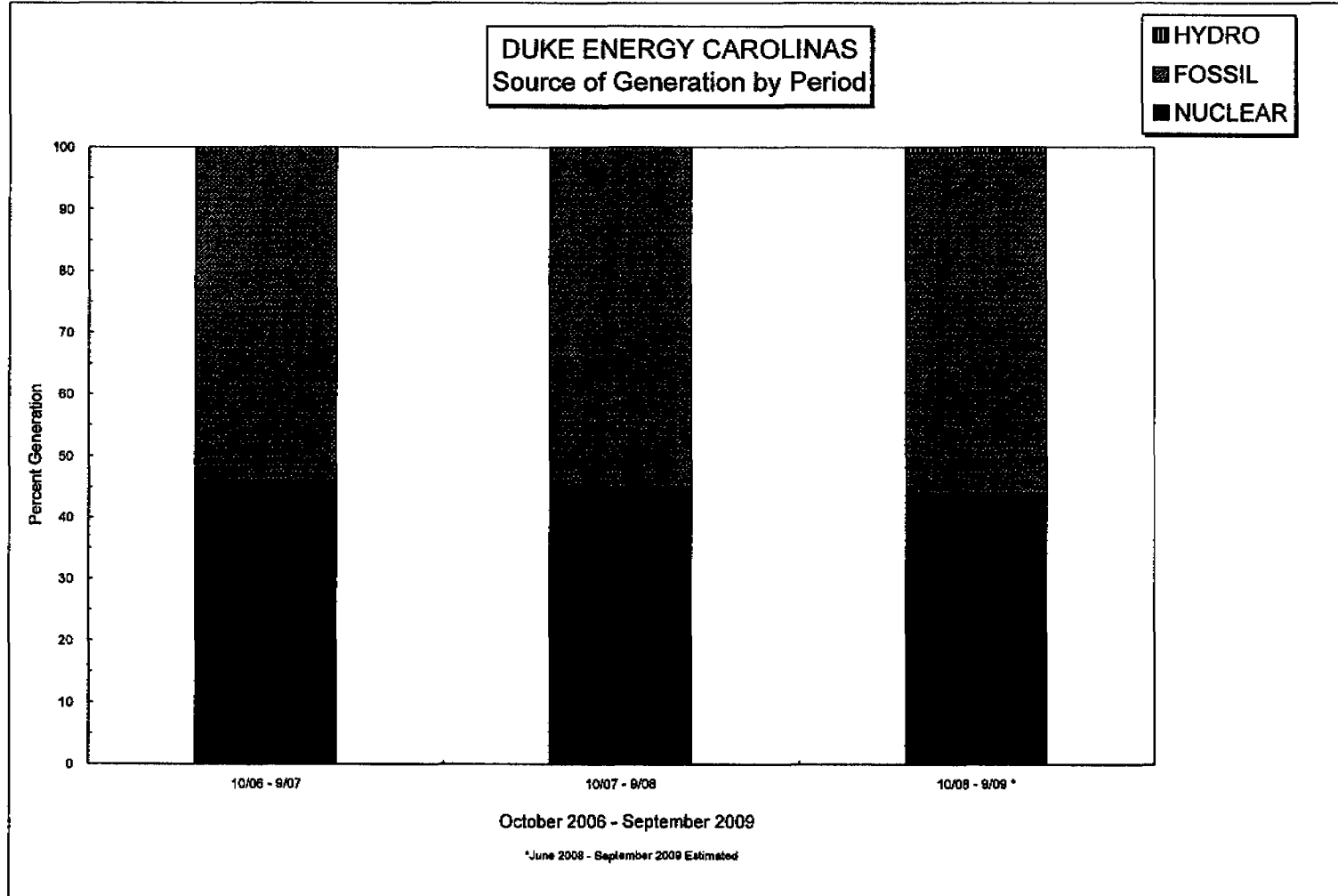
Line		Mo. Avg.												Mo. Avg.
No.	Description	12Mo. 6/07	July 2007	Aug. 2007	Sept. 2007	Oct. 2007	Nov. 2007	Dec. 2007	Jan. 2008	Feb. 2008	March 2008	April 2008	May 2008	11Mo. 5/08
1	Coal	\$103,405	\$109,483	\$118,107	\$109,698	\$109,848	\$106,627	\$77,147	\$110,208	\$102,770	\$111,471	\$90,924	\$120,285	\$106,052
2	Environmental Costs	1,029	2,347	3,312	2,025	2,680	1,925	1,808	1,585	1,208	2,367	1,394	1,672	2,029
3	Oil	1,515	1,444	1,151	832	1,103	1,093	1,725	4,027	1,407	1,845	1,790	2,034	1,677
4	Gas	2,504	4,819	49,526	(878)	1,361	8	638	166	148	118	110	97	5,101
5	Nuclear	<u>13,293</u>	<u>16,816</u>	<u>16,736</u>	<u>16,032</u>	<u>14,716</u>	<u>13,369</u>	<u>14,489</u>	<u>16,130</u>	<u>14,949</u>	<u>11,860</u>	<u>11,603</u>	<u>13,310</u>	<u>14,548</u>
6	Total	\$121,746	\$134,909	\$188,832	\$127,709	\$129,708	\$123,042	\$95,807	\$132,118	\$120,482	\$127,681	\$105,821	\$137,398	\$129,407
7	MWVH Gen.	7,129,135	7,925,164	8,608,699	7,516,644	7,659,472	6,989,546	7,147,739	7,933,161	7,511,068	6,875,938	5,985,470	7,437,006	7,417,264

**DUKE ENERGY CAROLINAS
Coal Cost per MBTU Burned**



**DUKE ENERGY CAROLINAS
Nuclear Cost Per MBTU Burned**





DUKE ENERGY CAROLINAS
SOUTH CAROLINA FUEL CLAUSE
2008 ANNUAL FUEL HEARING
CURRENT PERIOD FUEL COSTS INCURRED
\$000

Line No.	Item	July 2007	Aug. 2007	Sept. 2007	Oct. 2007	Nov. 2007	Dec. 2007	Jan. 2008	Feb. 2008	March 2008	April 2008	May 2008	Estimated June 2008	Estimated July 2008	Estimated Aug. 2008	Estimated Sept. 2008
1	Fossil Fuel	\$115,746	\$168,785	\$109,652	\$112,312	\$107,728	\$79,510	\$114,401	\$104,325	\$113,434	\$92,824	\$122,416	\$131,854	\$151,855	\$140,358	\$130,614
2	Nuclear Fuel	16,816	16,738	16,031	14,716	13,389	14,489	16,130	14,949	11,860	11,603	13,310	13,488	16,772	16,772	14,992
3	Fuel In Purchases	11,143	49,092	16,355	4,195	4,375	7,038	13,785	5,191	6,658	11,641	4,133	7,267	13,128	38,988	10,157
4	Fuel In Inter-system Sales	<u>7,993</u>	<u>9,311</u>	<u>6,629</u>	<u>16,613</u>	<u>12,434</u>	<u>12,824</u>	<u>12,936</u>	<u>26,594</u>	<u>24,424</u>	<u>9,864</u>	<u>16,909</u>	<u>15,922</u>	<u>12,267</u>	<u>7,611</u>	<u>9,797</u>
5	Total Costs	\$135,712	\$225,302	\$136,409	\$114,610	\$113,058	\$88,213	\$131,378	\$97,871	\$107,528	\$107,184	\$123,250	\$136,897	\$169,468	\$186,487	\$145,866
6	MWH Sales	7,279,072	7,854,583	8,111,419	6,822,139	6,188,442	6,264,209	7,056,123	7,032,471	6,470,728	6,117,040	6,159,891	7,039,850	7,598,021	8,080,925	7,766,398
7	Fuel Cost \$/KWH	1.8644	2.8664	1.6694	1.7307	1.8269	1.4082	1.8619	1.3917	1.6618	1.7522	2.0009	1.9416	2.2304	2.3325	1.8795
8	\$/KWH Billed	1.8187	1.8187	1.8187	1.7457	1.7457	1.7457	1.7457	1.7457	1.7457	1.7457	1.7457	1.7457	1.7457	1.7457	1.7457
9	SC Retail MWH Sales	1,993,847	2,099,492	2,176,337	1,750,923	1,668,270	1,708,122	1,654,160	1,838,977	1,867,287	1,631,941	1,623,541	1,886,567	1,991,563	2,123,705	2,050,428
10	\$ (Over) Under	\$911	\$22,038	(\$3,249)	(\$263)	\$1,355	(\$5,765)	\$2,164	(\$8,510)	(\$1,399)	\$106	\$4,142	\$3,700	\$9,553	\$12,462	\$2,743
11	Prior Period (Over) Under	\$ (9,066)														
12	Economic Purchase Adj. per Docket 2007-3-E			\$7,422												
13	Adjustment for June Temperatures												\$22,919			
14	Cumulative (Over) Under	(\$8,144)	\$13,894	\$18,068	\$17,805	\$18,160	\$13,395	\$15,549	\$9,039	\$7,640	\$7,746	\$11,888	\$38,507	\$48,160	\$60,622	\$63,365

DUKE ENERGY CAROLINAS
SOUTH CAROLINA FUEL CLAUSE
2008 ANNUAL FUEL HEARING
PROJECTED FUEL COST 10/08 - 9/09
\$000

Line														
No.	Item	Oct. 2008	Nov. 2008	Dec. 2008	Jan. 2009	Feb. 2009	March 2009	April 2009	May 2009	June 2009	July 2009	Aug. 2009	Sept. 2009	Total
1	Fossil Fuel	\$142,339	\$137,793	\$140,176	\$148,647	\$134,013	\$121,383	\$115,128	\$144,295	\$157,896	\$179,814	\$189,503	\$166,756	\$1,777,743
2	Nuclear Fuel	13,803	14,077	16,750	18,453	16,665	18,021	16,996	15,812	17,839	18,453	18,453	14,717	200,039
3	Fuel In Purchases	11,429	11,429	11,429	11,429	11,429	11,429	11,429	11,429	11,429	11,429	11,429	11,429	137,146
4	Fuel In Intersystem Sales	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>20,194</u>	<u>242,328</u>
5	Total Fuel Costs	\$147,377	\$143,105	\$148,161	\$158,335	\$141,913	\$130,639	\$123,359	\$151,342	\$166,970	\$189,502	\$199,181	\$172,708	\$1,872,600
6	Total MWH Sales	6,365,394	6,225,905	6,682,140	7,401,893	7,149,897	6,535,220	6,396,109	6,335,661	7,249,734	7,850,998	8,318,757	7,975,798	84,487,506
7	Fuel Costs Incurred \$/kwh	2.3153	2.2985	2.2173	2.1391	1.9848	1.9990	1.9287	2.3887	2.3031	2.4137	2.3945	2.1854	2.2164
8	SC Retail MWH Sales	1,713,645	1,686,876	1,759,025	1,855,370	1,820,880	1,892,459	1,677,945	1,676,762	1,895,012	2,004,877	2,133,815	2,058,854	21,975,399
9	SC Fuel Costs	\$39,876	\$38,773	\$39,003	\$39,688	\$36,140	\$33,832	\$32,363	\$40,053	\$43,644	\$48,392	\$51,089	\$44,585	\$487,063
10	(Over)/Under on Exhibit 5													\$83,365
11	SC Fuel Costs													\$550,428
12	SC Fuel Cost \$/kwh													2.5047

DUKE ENERGY CAROLINAS SOUTH CAROLINA FUEL CLAUSE 2005 ANNUAL FUEL HEARING SC ENVIRONMENTAL COST (OVER)/UNDER RECOVERY BY CLASS		Summer 2005 Firm Coefficient Pak (CP) KWh %		Residential General Lighting Industrial Total SC	
1	Residential	1,672,090	41.00%		
2	General Lighting	1,155,127	28.32%		
3	Industrial	1,251,518	30.68%		
4	Total SC	4,078,744	100.00%		
5	Residential				
6	Residential				
7	Residential				
8	Residential				
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DUKE ENERGY CAROLINAS
SOUTH CAROLINA FUEL CLAUSE
2008 ANNUAL FUEL HEARING
PROJECTED SC ENVIRONMENTAL COST ALLOCATION BY CLASS
\$000

		Summer	
		2007 Firm	
		Coincident	
		Peak (CP)	CP
		KWs	%
1	Residential	1,730,880	41.57%
2	General/Lighting	1,240,284	29.79%
3	Industrial	1,192,132	28.63%
4	Total SC	4,163,256	100.00%

	Environmental Costs	Oct. 2008	Nov. 2008	Dec. 2008	Jan. 2009	Feb. 2009	March 2009	April 2009	May 2009	June 2009	July 2009	Aug. 2009	Sept. 2009	Total
5	Reagents	\$ 2,760	\$ 2,350	\$ 2,235	\$ 2,853	\$ 2,680	\$ 2,684	\$ 2,507	\$ 2,900	\$ 3,225	\$ 3,854	\$ 3,761	\$ 3,415	\$ 35,323
6	Emission Allowance Expense	177	175	186	47	39	123	86	81	181	207	215	273	1,791
7	Environmental Costs Recovered													
	In Intersystem Sales	(1,290)	(275)	(359)	(1,835)	(1,054)	(1,035)	(233)	(35)	(575)	(426)	(257)	(91)	(7,487)
8	Gain on NOx Sales	-	-	(1,000)	(2)	-	-	-	-	-	(863)	(80)	(1,090)	(2,845)
9	Net Environmental Costs	\$ 1,648	\$ 2,250	\$ 1,062	\$ 1,063	\$ 1,664	\$ 1,771	\$ 2,360	\$ 2,946	\$ 2,831	\$ 3,073	\$ 3,629	\$ 2,508	\$ 26,803
10	SC % of KWH Sales	28.92%	27.09%	28.32%	25.07%	25.47%	25.90%	26.23%	26.47%	26.14%	25.54%	25.65%	25.82%	
11	SC Environmental Costs	\$ 444	\$ 610	\$ 280	\$ 286	\$ 424	\$ 458	\$ 618	\$ 780	\$ 740	\$ 785	\$ 931	\$ 647	\$ 6,883

	SC Environmental Costs													
	Allocated on CP KWs													
12	Residential	\$ 184	\$ 253	\$ 116	\$ 111	\$ 176	\$ 191	\$ 257	\$ 324	\$ 308	\$ 326	\$ 387	\$ 289	\$ 2,903
13	General/Lighting	132	182	83	79	128	137	184	232	220	234	277	193	2,080
14	Industrial	127	175	80	76	121	131	177	223	212	225	267	185	2,000
15	Total SC	\$ 444	\$ 610	\$ 280	\$ 286	\$ 424	\$ 458	\$ 618	\$ 780	\$ 740	\$ 785	\$ 931	\$ 647	\$ 6,883

	SC MWH Sales													
16	Residential	428,305	416,804	554,137	665,465	608,353	549,578	441,762	423,885	547,053	647,914	691,762	641,122	6,616,043
17	General/Lighting	483,453	443,791	448,000	480,770	455,972	430,530	452,729	482,296	531,206	580,210	594,023	575,457	5,906,438
18	Industrial	801,889	829,481	758,887	708,135	758,534	712,351	783,455	780,480	818,753	798,753	857,828	842,375	8,452,910
19	Total SC	1,713,645	1,689,876	1,759,025	1,855,370	1,820,860	1,692,459	1,677,945	1,676,762	1,895,012	2,004,877	2,133,615	2,058,954	21,975,391

	SC Environmental Costs \$/KWH													
20	Residential													0.0439
21	General/Lighting													0.0362
22	Industrial													0.0212

DUKE ENERGY CAROLINAS
SOUTH CAROLINA FUEL CLAUSE
2008 ANNUAL FUEL HEARING
PROJECTED FUEL FACTOR BY CUSTOMER CLASS

<u>Summary ¢/KWH</u>		SC Environmental Costs (Over)/Under Recovery		SC Environmental Costs	Combined Projected
		<u>SC Fuel Cost from Exhibit 6</u>	<u>from Exhibit 7</u>	<u>from Exhibit 8</u>	<u>Fuel Factor</u>
1	Residential	2.5047	-0.0217	0.0439	2.5269
2	General/Lighting	2.5047	-0.0168	0.0352	2.5231
3	Industrial	2.5047	-0.0114	0.0212	2.5145